



THE EFFECT OF HDI AND POVERTY ON THE OPEN UNEMPLOYMENT RATE DURING THE PANDEMIC (CASE STUDY: SOUTH SULAWESI)

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Abstrak

The phenomenon of the spread of covid-19 has a very deep impact on economic activity. south sulawesi province is one of the provinces whose economic growth is always above the national average also feels the impact of covid-19. HDI, poverty and unemployment are the variables that have the greatest impact. It is interesting to observe the economic variables of the South Sulawesi province during the Covid-19 period because it is one of the regions that has realistically high economic development every year. This study uses a cross-section of 24 districts/cities in South Sulawesi Province and a three-year time series 2020-2022 using secondary data obtained from the Central Bureau of Statistics. Fixed Effects Model in panel data analysis was used to analyze the data to observe the effect of HDI and poverty on the open unemployment rate. Based on the research findings, poverty has a negative and insignificant effect on open unemployment in South Sulawesi Province, while the human development index has a negative and significant effect on open unemployment.

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INTRODUCTION

At the end of 2019, an unexplained pneumonia was found in the Wuhan region of China. It was only on January 7, 2020 that the virus was found to be detected from patient samples. Then the World Health Organization, namely WHO registered it as a public health emergency of international concern on January 30. Furthermore, on February 11, WHO gave the name Corona Virus Disease 2019 (Covid-19). The covid-19 pandemic then swept the world quickly through transmission, this caused panic around the world (Jia et al., 2021).

Globally, starting on March 1, 2020, this virus was detected to be under one hundred thousand people, after which on May 1 there was a spike to 3.24 million people. For Indonesia, the virus was first announced after two people were infected on March 2, 2020 (Suryana et al., 2020). As a result of the massive spread of this virus and the imposition of rules restricting community mobility so that economic conditions are uncertain, many companies have reduced the number of workers' production to reduce costs (Fry-Bowers, 2020). Movement restrictions were implemented, impacting various areas of life (A'dani et al., 2021).

The Central Bureau of Statistics reported that economic growth in Indonesia contracted by -2.07% in 2020 (BPS, Indonesia Economic Report, 2020). As a result of the PSBB (Large-Scale Social Restrictions) which contributed to the increase in unemployment, followed by an increase in poverty (Hadiwardoyo, 2020). The increase in the number of open unemployment does not only stem from a slowdown in the rate of economic growth but also changes in people's behavior related to the covid-19 pandemic (Kasnely, 2020).

Open unemployment, as defined by the Central Bureau of Statistics, first refers to individuals who are looking for work. Second, people who are preparing to start their own business but do not yet have a job. Third, people who are not looking for a job because they believe it is impossible to find one. The last individual, ranked fourth, has a job but has not started it yet.

No.	Year	Open Unemployment Rate
1.	2020	6,31
2.	2021	5,72
3.	2022	4,51

TABLE 1. Open Unemployment Rate in South Sulawesi Province 2020-2022

The table above explains that the open unemployment rate in 2020 increased compared to other years. Which in 2021 and 2022 has decreased, with 2022 as the lowest open unemployment rate.

The cause of increasing unemployment is the unstable economic conditions in a country. The covid-19 pandemic has caused a weakening of economic activity (Indayani & Hartono, 2020). During covid-19, many people (Fikri & Gopar, 2021). The existence of unemployment problems has a huge impact on the poverty rate in Indonesia (Zakaria 2020).

Apart from the open unemployment rate factor which is the impact of covid-19, the human development index (HDI) is also an impact. In essence, HDI is also part of national

development. This case is a renewal for someone to find ways to think and behave in life. This is closely related to a change in the mentality of society in inspiring development.

No.	Year	IDH
1.	2020	71,93
2.	2021	72,24
3.	2022	72,82

TABLE 2. Human Development Index (IDH) in South Sulawesi Province (%) 2020-2022

Based on the table above, it can be seen that the human development index continues to increase, where in 2022 the human development index is the highest at 72.82%.

The human development index is a measure to compare living standards, education, literacy, and life expectancy across countries (Davies & Quinlivan, 2006). A composite index known as the Human Development Index assesses a nation's progress in three key areas: future, education, and lifestyle (Utami, 2020). According to Yunitasari (2007), the HDI indirectly interacts with community-based government support. The index is then used to measure the physical and non-physical quality of society, which includes education, health, and economic indicators (Suliswanto, 2010). The human development index must not only be developed but also measured (Irwandi, et al, 2023).

The effect of covid-19 is not only on the open unemployment rate but also on the poverty rate. Where theoretically if the population has a job or in other words is not unemployed.

No.	Year	Poverty
1.	2020	8,72
2.	2021	8,78
3.	2022	8,63

TABLE 3. The Poverty of South Sulawesi Province, 2020-2022

The table shows that in 2021 the poverty rate among residents is the highest while in 2022 it is the lowest.

Poverty is the inability to fulfill basic needs (Mahsunah, 2013). A high poverty rate can affect the cost of greater expenditure in economic development (Mulia & Saputra, 2020). An economic slowdown will have an impact on increasing poverty (Suryahadi, Al Izzati & Suryadarma, 2020). Where the community groups that have the highest vulnerability due to the co-19 pandemic are people with income obtained from a daily income (Arianto, 2020). Poverty can be caused by economic aspects such as income levels, as well as social and institutional aspects (Bado, Irwandi, & Karmila, 2023).

The covid-19 pandemic has a tremendous impact on people's lives, especially in the economic sector, so this study aims to determine the effect of the human development index and poverty on the open unemployment rate in South Sulawesi during the pandemic.

RESEARCH METHODOLOGY

This study uses secondary data collected using information from the Central Bureau of Statistics. A quantitative strategy was used in this study, focusing on South Sulawesi. This study aims to find out how open unemployment is affected by poverty and the human development index. This study is panel data in nature. South Sulawesi province covers 24 regions and cities, over a three-year period, from 2020 to 2022.

Panel Data Regression Analysis

The data in this study, namely, HDI (X1) and Poverty (X2) variables were tested using the panel data method. Panel data regression analysis in this study was used to determine the effect of the independent variable on the dependent variable and how much the relationship was used panel data regression analysis with a General Least Square (GLS) method (Baltagi, 2005; A'yun & Irwandi, 2022). Data processing using EViews 10. The following equation, Un is the unemployment rate, HDI is human development index, Po is Poverty, ϵ is residual (error term):

$$Un_{it} = \alpha_{it} + HDI_{it} + Po_{it} + \epsilon$$

Panel Data Regression Estimation Model

There are three existing techniques in panel data regression that can be used to estimate regression models, namely Common Effect (CEM), Fixed Effect (FEM), and Random Effect (REM) by Baltagi (2005).

The Common Effect Model (CEM) is a simple approach method, only combining cross section and time series data. Time series and cross-section units are used in this model, and the Normal Least Square (OLS) recurrence strategy is used to assess the board information. In the fixed effect model (FEM), one object has a constant at various times with a fixed size. Similarly, the regression coefficient is fixed from time to time. In the ECM method, the assessment should be done without weighting or Least Square False Factor (LSDV) and with weighting (cross region weight) or General Least Square (GLS). The Random Effect Model (REM) is used to overcome the shortcomings in the FEM, which uses pseudo factors to bring vulnerability into the model. Since it does not use pseudo-variables, the random effect method utilizes residuals, which are considered to have a relationship with time and objects. The intercept difference is taken into account by the error term in each region of the Random Effects model.

Partial Test (t)

The reason for testing individual speculation with the t test is to determine how each independent factor impacts the dependent variable. Speculation testing is not determined by comparing the t count and the t table. If the t count value is greater than the t table then reject the null hypothesis. whereas, if the t count value is less than the t table value then fail to reject the null hypothesis.

Simultaneous Test (F)

The ability of independent variables to simultaneously affect the dependent variable is known as simultaneous hypothesis testing. By comparing Fcount and Ftable. The null

hypothesis is rejected if the Fcount value is greater than Ftable. However, if Fcount is smaller than Ftable then the null hypothesis fails to be rejected.

RESULTS AND DISCUSSION

Panel Data Regression Estimation

The Common Effect Model (CEM) approach is one of at least three methods for estimating panel data, the Fixed Effect Model (FEM) approach and then, the Random Effect Model (REM) approach. To determine the best strategy for estimation, it is important to conduct feasibility tests, specifically the Chow test, the Lagrange multiplier test, and the Hausman test.

Chow Test Results

The Chow test is used to determine whether the model used is CEM or FEM, using the Confined F test by comparing F values across segments. The hypothesis is as follows:

H_0 : Common Effect Model

H_1 : Fixed Effect Model

With the following criteria:

If the value of the probability of cross section $F > \alpha$ which is 0.05 then H_0 is accepted, H_1 is rejected.

If the value of the probability of cross section $F < \alpha$ which is 0.05 then H_1 is accepted, H_0 is rejected.

Effect Test	Statistic	df	Prob.
Cross-section F	20.290971	(23.46)	0.0000
Cross-section Chi-square	173.594486	23	0.0000

Source: Eviews 10

TABLE 4. Results of Chow Test

In panel data processing, the chow test shows that the F value has a probability of 0.0000, which indicates that the F value has a probability smaller than 0.05, so H_0 is rejected and H_1 is accepted. The selected model is the Fixed Effect model (FEM).

H_0 : Random Effect Model

H_1 : Fixed Effect Model

The criteria are as follows:

If the probability value of the cross section is greater than 0.05, then H_0 is accepted and H_1 is rejected.

Hausman Test Results

When deciding whether to use REM or FEM, the next statistical test, the Hausman test, must be taken into account. The hypothesis is as follows:

If the probability value of the random cross section is smaller than 0.05, then H_1 is accepted and H_0 is rejected.

Test Summary	Chi-Sq. Statistic	Chi-Sq. df	Prob.
Cross-section random	88.953403	2	0.0000

Source: Eviews 10

TABLE 5. Result of Hausmant Test

Given the consequences of the Hausman test in dealing with board information, an irregular likelihood value of 0.0000 was obtained, which makes sense that the F cross-segment likelihood value is below 0.05 or 0.000 < 0.05, which implies that H_0 is rejected and H_1 is recognized. The Fixed Effect Model (FEM) is then the model used.

Goodness of Fit Test Results

Given the side effects of the Decency test in assessing the recurrence of board information, the best model is the FEM. Where the estimated regression results using FEM can be seen in the attached table:

Variable	Coefficient	SE	t-Statistic	Prob
C	118.9018	16.91608	7.028920	0.0000
HDI	-1.523634	0.202409	-7.527504	0.0000
Po	-0.675425	0.561691	-1.202485	0.2353

Source: Eviews 10

TABLE 6. Estimation Result

The following equation can be used to explain the results of the Fixed Effect Model:

$$Un = 118.9018 - 1.523634HDI - 0.675425Po + \varepsilon$$

The constant value of 118.9018 means that if the human development index and poverty are 0, then the level of open unemployment is 118.9018.

The human growth index (HDI) variable in table 6 has a coefficient of -1.523634, with a probability of 0.0000 (0.05). So there is a negative and significant influence on open unemployment as the dependent variable. Therefore, a 1% increase in the human development index will result in a decrease in the level of open unemployment. The poverty variable (Po) in Table 6 has a probability of 0.2353 (greater than 0.05) and a coefficient of -0.675425. Therefore, poverty has a negative but insignificant effect on the open unemployment rate variable. According to the Ceteris Paribus assumption, the open unemployment rate will decrease by 0.675425% if poverty increases by 1%.

Partial Significance Test

From table 6, it can be seen that the probability value and t statistic of each variable show that partially only the HDI variable has a significant effect on the dependent variable. while the Po variable has no significant effect.

Simultaneous Significance Test

The regression results show that the f-measure value is 0.0000 and is below the 5% level. This means that all independent variables

(HDI and Po) can jointly influence the dependent variable (Open unemployment rate).

Coefficient of Determination (R²)

This test has shown R² value of 0.96. This shows that the model can explain 96% of the relationship between the human development index and poverty, while other factors not included in this study explain the remaining 4%.

The findings of this study are in line with Garnella et al (2020), who observed how poverty, economic growth, and human development index affect the open unemployment rate of Aceh Province. They found that the human development index has a negative and significant effect while poverty has a negative and insignificant effect on the open unemployment rate.

CONCLUSIONS

The open unemployment rate in 24 regencies in South Sulawesi Province is negatively and significantly influenced by the Human Development Index with a coefficient value of -1.523634. So that the open unemployment rate will decrease with every increase in the human development index. The poverty variable also has a negative but insignificant effect on the open unemployment rate in 24 districts in South Sulawesi Province.

Government attention to human resource development should be a priority. Programs designed by local governments in the education, health and skills sectors. superior human resources will contribute greatly to regional progress.

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